

REMARKS

Reconsideration and allowance are respectfully requested in view of the foregoing amendment and the following remarks.

Upon entry of this Amendment, claims 44-96 are pending in the application. Claim 92 has been amended. Further, the specification has been amended to add the priority claim.

Before any further action, Applicant's undersigned representatives would like to schedule a personal interview to discuss the outstanding rejections in this application. Applicant's undersigned representatives will call to schedule the interview.

Claim 92 is objected to as being of improper dependent form. In accordance with the Examiner's suggestion, claim 92 has been rewritten in independent form. Withdrawal of this objection is respectfully requested.

Claims 83-88 and 92 are rejected under 35 U.S.C. §102(b) by Kubacki et al., U.S. Patent No. 4,476,781. This rejection is respectfully traversed.

Claim 83 is directed to an opening tab to be fastened on an end of a can and having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof. Claim 87 is directed to a can end having an opening tab fastened thereon, the opening tab having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof. Claim 88 is directed to a can having a can end with an opening tab fastened thereon, the opening tab having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof, wherein the at least one laser engraved mark is located on the bottom surface of the opening tab to form a code indicating that a person who opens the can using the tab is a winner. Claim 92 is directed to an opening tab to be fastened on an end of a can and having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof, wherein the at least one laser engraved mark forms a code indicating a site of production.

Kubacki does not disclose an opening tab having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof, as recited in claims 83, 87, 88, and 92. Kubacki is directed to a system in which indicia is stamped into sheet metal subsequently used in the production of tabs of aluminum cans. The marking of tabs by stamping prevents several challenges: it is difficult to provide the markings on the small tab surface (often leading to the use of larger tabs); it might be difficult to mark coated surfaces; and if there is a need for frequent changes in tooling, the stamping machinery can be very complicated and/or difficult to handle. This situation is even worse when opening tabs are to be provided with traceability markings, as discussed in the present application. Traceability marks are

indicia showing exact production time for each single opening tab, and they are updated every hour or preferably every minute. Further, the stamping technique may deform or distort the strip material during the stamping operation, necessitating additional pressing stages after the stamping stage, as well as reduced tab strength. Thus, the opening tabs in Kubacki have several disadvantages.

The opening tab according to claims 83, 87 and 88 provide the advantages that the opening tab can exhibit distinctive, permanent markings, even on very limited areas. The markings can be provided with minimum or no distortion or deformation of the tab material, and without jeopardizing the strength of the tab. Further, the layout of the laser markings on the tabs can be easily changed, without the need for substantial change in the production apparatus. Thus, the claimed opening tab can include marks indicative of, for example, the exact production time (see claims 85 and 86). Alternatively, the opening tab can present very advanced promotional marks (see claim 88), for example, to indicate a winner in a lottery, with a frequency or layout of tabs indicating a winner can be easily changed during production, without the need for extensive change in the production apparatus. Accordingly, reconsideration and withdrawal of the rejection of claims 83, 87, 88, and 92 is respectfully requested. Claims 84-86 are allowable by virtue of their dependence on claim 83 and for their recitation of additional patentable subject.

Claims 44, 63, 83-88 and 92 are rejected under 35 U.S.C. §102(e) by Stasiuk, U.S. Patent No. 6,105,806. This rejection is respectfully traversed.

Claim 44 is directed to a method of manufacturing articles to be included in cans. The method includes intermittently feeding a metal strip having an upper surface and a lower surface into an article forming unit and providing at least one of the upper surface and the lower surface of the strip with laser engravings from a laser unit when the strip is in immobilized condition and before the strip is fed into the article forming unit where the articles are formed. The laser engravings form marks on at least one of the upper surface and the lower surface of the strip. Claim 63 is directed to an apparatus for manufacturing articles to be included in cans. The apparatus includes a supply of a metal strip having an upper surface and a lower surface, an article forming unit, and a strip feeder between the supply and the article forming unit. The strip feeder intermittently moves the strip into the article forming unit such that the strip is in immobilized condition between periods of intermittent movement. A laser unit is arranged between the supply of metal strip and the article forming unit, the laser unit providing laser engravings on at least one of the upper surface and the lower surface of the strip. The laser engravings form marks on at least one of the upper

surface and the lower surface of the strip to be formed into the articles by the article forming unit. A control unit is in communication with the laser unit, the laser unit being controlled so that the laser engravings are provided on at least one of the upper surface and the lower surface of the strip when the strip is in the immobilized condition between the periods of intermittent movement. As discussed above, claims 83, 87, 88, and 92 disclose opening tabs having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof.

Stasiuk does not disclose a method that includes providing at least one of the upper surface and the lower surface of a metal strip with laser engravings from a laser unit, as recited in claim 44. Further, Stasiuk does not disclose an apparatus that includes a laser unit that provides laser engravings on at least one of the upper surface and the lower surface of a metal strip, as recited in claim 63. Moreover, Stasiuk does not disclose an opening tab having at least one laser engraved mark on at least one of a top surface and a bottom surface of a metal strip, as recited in claims 83, 87, 88, and 92. Stasiuk discloses a coated pull tab that includes a laser etched image thereon, wherein the image is created by localized laser removal of the coated layer to expose an uncoated surface of the pull tab. As discussed on column 8, line 58 to column 9, line 51, the tab of Stasiuk includes an organic coating on at least one side thereof. The coated tab is then treated with a laser that burns or etches a predetermined tab decoration into the tab coating such that the aluminum shows through the coating. Thus, Stasiuk discloses laser etched coated tabs and nowhere discusses providing laser engraved marks on at least one of a top surface and a bottom surface of the metal or metal tab itself. Stasiuk does not laser engrave metal – it only teaches removal of a non-metal coating to expose the underlying metal (aluminum) layer. Withdrawal of the rejection of claims 44, 63, 83, 87, 88, and 92 is respectfully requested. Claims 84-86 are allowable by virtue of their dependence on claim 83 and for their recitation of additional patentable subject matter.

Claims 44, 45, 56, 57, 61-64, 74-76, 81, 82, 90, 91, 93-96 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Stasiuk. This rejection is respectfully traversed.

To begin with, Kubacki and Stasiuk are drawn to mutually exclusive structures. Specifically, it would not have been obvious to replace the stamping of Kubacki with a laser of Stasiuk because 1) Stasiuk does not teach engraving on metal and 2) Stasiuk teaches to use stamping and lasering in combination, not lasering in replacement of stamping.

Even if Kubacki and Stasiuk are combined, that combination does not teach laser engraving of a metal strip. Instead, Kubacki discloses a system in which indicia is stamped

into sheet metal. Stasiuk discloses providing a laser etched image on a pull tab wherein the image is created by a localized laser removal of a coating provided on the tab to expose an uncoated surface of the pull tab. Stasiuk does not laser engrave the metal surface, it only exposes it.

Thus, neither Kubacki nor Stasiuk teach or suggest a method that includes providing at least one of the upper surface and the lower surface of a metal strip with laser engravings from a laser unit, as recited in claim 44 and 91. Further, neither Kubacki nor Stasiuk teach or suggest an apparatus that includes a laser unit that provides laser engravings or laser engraved marks on at least one of the upper surface and the lower surface of a metal strip, as recited in claims 63, 90, and 95. Moreover, neither Kubacki nor Stasiuk teach or suggest a method that includes forming laser engraved marks with a laser unit on at least a selected surface of the upper surface and the lower surface of a metal strip, as recited in claim 93. Withdrawal of this rejection of claims 44, 63, 90, 91, 93 and 95 is respectfully requested. Claims 45, 56, 57, 61 and 62 are allowable by virtue of their dependence on claim 44, claims 64, 74-76, 81, and 82 are allowable by virtue of their dependence on claim 63, claim 94 is allowable by virtue of its dependence on claim 93, and claim 96 is allowable by virtue of its dependence on claim 95. Further, neither Kubacki nor Stasiuk teach or suggest laser engravings having a depth of about $1\text{-}5\mu\text{m}$, as recited in claims 45 and 64. As noted above, Stasiuk does not teach or suggest laser engravings or laser engraved marks on at least one of the upper surface and the lower surface of a metal strip, let alone a laser engraving having a depth as recited in claims 45 and 64. How can Stasiuk teach that it is obvious to engrave $1\text{-}5\mu\text{m}$ when Stasiuk does not engrave metal at all? Besides, there's no connection between the speed of production and the depth of the laser engraving in the Stasiuk disclosure, as implied in the Office Action.

Claims 46-49 and 65-67 are rejected under 35 U.S.C. §103(a) over Kubacki et al. in view of Stasiuk as applied to claims 44 and 63 above and further in view of Kwon, U.S. Patent No. 6,160,835. This rejection is respectfully traversed.

The Office Action relies on Kwon to teach a preferred method of laser engraving using a laser beam in the near IR wavelength range for marking metal. This does not make up for the deficiencies noted above with respect to Kubacki and Stasiuk. Therefore, claims 46-49 are allowable by virtue of their dependence on claim 44 and claims 65-67 are allowable by virtue of their dependence on claim 63. Moreover, Kwon does not teach or suggest using a laser beam in the near IR wavelength range for marking cans. There is no motivation for “picking” and “choosing” among the various elements of Stasiuk/Kubacki/Kwon, to the exclusion of other elements, to arrive at the claimed

combination. See In re Kamm, 172 USPQ 298, 301, 302 (CCPA 1972) (“It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art”). Moreover, the question is not whether one “could” have combined the disclosures (based on impermissible hindsight), but whether one “would” have combined the disclosures, which requires motivation to do so. Withdrawal of this rejection is respectfully requested.

Claims 50-55 and 68-73 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Stasiuk further in view of Kwon as applied to claims 46 and 65 above, and further in view of Kobsa, U.S. Patent No. 6,163,010. This rejection is respectfully traversed.

The Office Action relies on Kobsa to teach a diode laser pump Nd:YAG laser. This does not make up for the deficiencies noted above with respect to Kubacki, Stasiuk and Kwon. As a result, claims 50-55 are allowable by virtue of their dependence on claim 44 and claims 68-73 are allowable by virtue of their dependence on claim 63. Moreover, Kobsa does not teach or suggest using a diode laser pumped Nd:YAG laser for marking cans. In contrast, Kobsa discloses laser cutting a manufactured object. There is no motivation for “picking” and “choosing” among the various elements of Stasiuk/Kubacki/Kwon/Kobsa, to the exclusion of other elements, to arrive at the claimed combination. See In re Kamm, *supra*. Moreover, the question is not whether one “could” have combined the disclosures (based on impermissible hindsight), but whether one “would” have combined the disclosures, which requires motivation to do so. Withdrawal of this rejection is respectfully requested.

Claims 58-60 and 77-79 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Stasiuk as applied to claims 44 and 76 above and further in view of JP 7-53099. This rejection is respectfully traversed.

The Office Action relies on JP '99 to teach a guiding system for guiding a strip of material. This does not make up for the deficiencies noted above with respect to Kubacki and Stasiuk. As a result, claims 58-60 are allowable by virtue of their dependence on claim 44 and claims 77-79 are allowable by virtue of their dependence on claim 63. Moreover, JP '99 does not teach or suggest using a guiding system for marking cans. In contrast, JP '99 discloses a guiding system for a paper printer. There is no motivation for “picking” and “choosing” among the various elements of Stasiuk/Kubacki/JP '99, to the exclusion of other elements, to arrive at the claimed combination. See In re Kamm, *supra*. Moreover, the question is not whether one “could” have combined the disclosures (based on impermissible

hindsight), but whether one “would” have combined the disclosures, which requires motivation to do so. Withdrawal of this rejection is respectfully requested.

Claims 44, 45, 56-57, 61-64, 74-76, 81, 82 and 89-96 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Carlson, U.S. Patent No. 4,375,025. This rejection is respectfully traversed.

In the previous Amendment dated December 5, 2001, Applicant argued that Kubacki and Carlson are directed to non-analogous arts because 1) they are not from the same field of endeavor, and 2) they are not directed to solving the problems that are solved by the present Applicant. In response, the Examiner notes that the art of laser engraving is considered to be reasonably pertinent to the particular problem. Applicant respectfully acknowledges that the Examiner concedes that Kubacki and Carlson are not from the same field of endeavor.

The Examiner states that “laser engraving is considered to be reasonably pertinent to the particular problem with which the Applicant was concerned.” However, the art of “laser engraving” per se is not a problem. Applicant’s concern was with providing a laser in an environment where the material is fed intermittently. By sharp contrast, Carlson is directed to laser marking electrical components that are continuously moved past a laser source. Carlson is not concerned with providing laser engraved marks on a work piece when the work piece is in an immobilized condition. Moreover, Carlson is not concerned with laser engraving an opening tab for beverage cans.

Further, the Examiner asserts that the laser system of Carlson is operable whether or not the workpiece is in an immobilized condition. However, the system in Carlson cannot be operated when the strip is in immobilized condition. The system of Carlson comprises a photoelectric eye that detects a leading edge of the electric component as the electric component is driven thereby and gives the laser a firing signal (column 2, lines 39-45). Thus, if the strip is not continuously moving past the electric eye to intercept the light beam to trigger the laser, the laser will not fire. As a result, the laser of Carlson cannot be applied to a system that is intermittently fed, like the system of Kubacki. Carlson does not teach one of ordinary skill in the art how to apply a laser to an intermittently fed strip. Kubacki’s system would be destroyed if converted to a continuously fed strip, as taught by Carlson because of the nature of Kubacki’s system requiring intermittent feeding. Also, Kubacki does not disclose the use of a laser for engraving, and was not aware of the problems associated with laser engraving for an intermittently fed strip. Applicant discovered how to apply a laser to an intermittently fed strip used to make beverage cans. See page 3, line 26 to page 4, line 29, and page 8, lines 6 to 32.

Moreover, the Examiner asserts that marking a work piece while it is in an immobilized condition due to intermittent feeding would result in a better quality of the markings than if the work piece is on the move. To begin with, Applicant notes that accuracy does not necessarily improve with a laser on an intermittently fed article due to inertia, positioning, etc. Moreover, Carlson does not disclose the use of a laser for accurately engraving an opening tab, and was not aware of the problems associated with laser engraving for an intermittently fed strip. The laser system of Carlson cannot be modified to provide laser engraving for an intermittently fed strip without the benefit of Applicant's disclosure and impermissible hindsight. See Grain Processing Corp. v American Maize-Products Co., 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988) ("It is impermissible to use the applicant's disclosure as a blueprint to reconstruct the claimed invention out of isolated teachings in the prior art").

Thus, neither Kubacki nor Carlson teach or suggest a method that includes providing at least one of the upper surface and the lower surface of a metal strip with laser engravings from a laser unit when the strip is in an immobilized condition, as recited in claims 44. Further, neither Kubacki nor Carlson teach or suggest an apparatus that includes a control unit that controls the laser unit so that laser engravings are provided on at least one of the upper surface and the lower surface of a metal strip when the strip is in an immobilized condition between periods of intermittent movement, as recited in claim 63. Further, neither Kubacki nor Carlson teach or suggest a method that includes creating at least one laser engraved mark on an opening tab for a can end, as recited in claim 89. Further, neither Kubacki nor Carlson teach or suggest an apparatus that includes a laser unit that is controlled so that laser engravings are provided on at least one of the upper surface and the lower surface of a metal strip when the strip is between periods of rapid movement, as recited in claim 90. Further, neither Kubacki nor Carlson teach or suggest a method that includes providing at least one of the upper surface and the lower surface of a metal strip with laser engravings from a laser unit when the strip is in between periods of rapid movement, as recited in claim 91. Further, neither Kubacki nor Carlson teach or suggest a method that includes forming laser engraved marks with a laser unit on at least a selected surface of the upper surface and the lower surface of a metal strip when the strip is in an immobilized condition, as recited in claim 93. Moreover, neither Kubacki nor Carlson teach or suggest an apparatus that includes a laser unit that is controlled so that laser engraved marks are provided on at least a selected surface of the upper surface and the lower surface of a metal strip when the strip is in an immobilized condition, as recited in claim 95. Withdrawal of this

rejection of claims 44, 63, 89, 90, 91, 93 and 95 is respectfully requested. Claims 45, 56, 57, 61 and 62 are allowable by virtue of their dependence on claim 44, claims 64, 74-76, 81, and 82 are allowable by virtue of their dependence on claim 63, claim 94 is allowable by virtue of its dependence on claim 93, and claim 96 is allowable by virtue of its dependence on claim 95. Further, neither Kubacki nor Carlson teach or suggest laser engravings having a depth of about 1-5 μ m, as recited in claims 45 and 64.

Claims 46 and 65 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Carlson as applied to claims 44 and 63 above and further in view of Kwon. This rejection is respectfully traversed.

The Office Action relies on Kwon to teach a preferred method of laser engraving using a laser beam in the near IR wavelength range for marking metal. This does not make up for the deficiencies noted above with respect to Kubacki and Carlson. Therefore, claim 46 is allowable by virtue of its dependence on claim 44 and claim 65 is allowable by virtue of its dependence on claim 63. Moreover, Kwon does not teach or suggest using a laser beam in the near IR wavelength range for marking cans. There is no motivation for “picking” and “choosing” among the various elements of Carlson/Kubacki/Kwon, to the exclusion of other elements, to arrive at the claimed combination. See In re Kamm, supra. Moreover, the question is not whether one “could” have combined the disclosures (based on impermissible hindsight), but whether one “would” have combined the disclosures, which requires motivation to do so. Withdrawal of this rejection is respectfully requested.

Claims 47-55 and 66-73 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Carlson, further in view of Kwon as applied to claims 46 and 65 above and further in view of Kobsa. This rejection is respectfully traversed.

The Office Action relies on Kobsa to teach a diode laser pump Nd:YAG laser. This does not make up for the deficiencies noted above with respect to Kubacki, Carlson and Kwon. As a result, claims 47-55 are allowable by virtue of their dependence on claim 44 and claims 66-73 are allowable by virtue of their dependence on claim 63. Moreover, Kobsa does not teach or suggest using a diode laser pumped Nd:YAG laser for marking cans. In contrast, Kobsa discloses laser cutting a manufactured object. There is no motivation for “picking” and “choosing” among the various elements of Carlson/Kubacki/Kwon/Kobsa, to the exclusion of other elements, to arrive at the claimed combination. See In re Kamm, supra. Moreover, the question is not whether one “could” have combined the disclosures (based on impermissible hindsight), but whether one “would” have combined the disclosures, which requires motivation to do so. Withdrawal of this rejection is respectfully requested.

Claims 58-60 and 77-79 are rejected under 35 U.S.C. §103(a) over Kubacki et al in view of Carlson as applied to claims 44 and 76 above and further in view of JP 7-53099. This rejection is respectfully traversed.

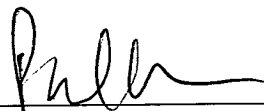
The Office Action relies on JP '99 to teach a guiding system for guiding a strip of material. This does not make up for the deficiencies noted above with respect to Kubacki and Carlson. As a result, claims 58-60 are allowable by virtue of their dependence on claim 44 and claims 77-79 are allowable by virtue of their dependence on claim 63. Moreover, JP '99 does not teach or suggest using a guiding system for marking cans. In contrast, JP '99 discloses a guiding system for a paper printer. There is no motivation for “picking” and “choosing” among the various elements of Carlson/Kubacki/JP '99, to the exclusion of other elements, to arrive at the claimed combination. See In re Kamm, supra. Moreover, the question is not whether one “could” have combined the disclosures (based on impermissible hindsight), but whether one “would” have combined the disclosures, which requires motivation to do so. Withdrawal of this rejection is respectfully requested.

In view of the above amendments and remarks, Applicant submits that all of the claims are patentable and that the entire application is in condition for allowance.

Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Following the title, the following sentence has been added:

This is a continuation of International Application No. PCT/SE99/00692, filed on April 28, 1999, claiming priority from Swedish patent application No. 9801489-7, filed on April 28, 1998.

IN THE CLAIMS:

Claim 92 is amended as follows:

92. (Amended) An opening tab [as set forth in claim 83] to be fastened on an end of a can and having at least one laser engraved mark on at least one of a top surface and a bottom surface thereof, wherein said at least one laser engraved mark forms a code indicating a site of production.